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The influence of a gender system in a language on perception is examined in a cross-cultural study. Participants were from four language groups, two with a gender system, Spanish and French, and two with a limited gender system, English and Japanese. In task 1, participants were asked to assign a gender to 20 objects. In task 2, they were asked to assign attributes to the objects. Language gender tags influenced the Spanish and French participants in their choice of gender assignment more than perceived characteristics of the objects, while perceived gender attributes influenced the gender assignment of the English and Japanese speakers. It appears that in languages with grammatical gender systems, like Spanish and French, the gender system influences perception.

Key words: gender lauguage system, cross-linguistic study

Introduction

Gender is an "omnirelevant noticeable" in social interaction (Garfinkel, 1967, p.118). When we speak, we gender not only ourselves and the other, but also other details of the scene. Sacks (1992) emphasized instances where we bring gendered issues to focused attention, as when we go bird watching and refer to the bird as "he". If "gender creeps into talk" (Hopper & LeBaron, 1998), it is also possible that gender creeps into perception. This paper examines the possibility that a gender system as formally used in language might influence thought.

The relationship between language and thought has been a major issue of concern in psychology since Sapir (1970) and Whorf and Carroll (1956) advanced their hypothesis that language determines, or at least influences, the way we look at our world. Although a range of studies have challenged the validity of both linguistic determinism and linguistic relativism on empirical and theoretical grounds (Au, 1992; Brown & Lenneberg, 1954), recent reconceptualizations of the language-thought relationship that emphasize sociocultural context of language and culture acquisition suggest an interaction relationship between them (Gumperz & Levinson, 1991; Hardin & Banaji, 1993; Hunt & Agnoli, 1991; Lucy, 1992).

Language shapes our higher order cognitive processes. In some Indo-European languages (e.g., Spanish), personal pronouns are not obligatory, partly, because the referents can be recovered from the verb inflections (Corbett, 1991). In languages such as Chinese and Japanese, however pronouns can be omitted despite the absence of verb inflections and the grammatical

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rule of subject-verb agreement (Hinds, 1982; Li & Thompson, 1976). Kashima and Kashima (1997) found that cultures with pronoun drop languages tended to be less individualistic than those with nonpronoun drop languages.

In a similar vein, some languages have a gender system, such as German, Italian and French, where the definite article (e.g., *le*, or *la* in French) depends on the noun's grammatical gender. In a comparative study of speakers of Arabic and English by Clarke, Losoff, McCracken and Still (1981), subjects were asked to evaluate objects along a masculine-feminine scale; comparison of the responses of the two groups suggests that the gender of the nouns in Arabic affected the response of the Arabic speakers. Thus nouns like "*necklace*" and "*perfume*", whose equivalents are masculine in Arabic, received a higher masculine rating from Arabic than from English speakers. Similar correlations of gender and abstract nouns in German were established by Zubin and Kopcke (1984) in an experiment using a semantic differential technique.

Mills (1986) investigated gender assignment to animals and objects by German and English children. The assigned gender correlated highly with grammatial gender in German and pronoun use in English. But what of those which did not fit, particularly in German neuters? The question remained as to whether subjects, rather than accessing the gender system, perceived gender-related attributes in the objects. To establish this, a semantic differential test was used. Subjects were asked to rank the objects on scales such as large-small, strong-weak, tense-relaxed, which were shown to correlate with masculine-feminine attributes. Mills (1986) concluded that grammatical gender was the dominant influence on the choice of gender. However, a close investigation of the results reveal that Mills based this conclusion on only one case, "*clock/Uhr.*". "*Clock*" was perceived as having female attributes, took a masculine pronoun and personified as male. Several more cases like these would have to be identified before convincing claims could be made.

The purpose of the present experiment was to further explore the influence of a gender system language on gender identification in a cross-linguistic study. Native Spanish and French speakers represented the gender system groups, while native English and Japanese speakers, the limited gender systems. However, it must be noted that while English is not a gendered language per se, gender-marked pronouns remain in a "lively style" of conversational English (Hopper & LeBaron, 1998). In Japanese pronouns are not gendered and in fact can be omitted despite the absence of verb inflections and the grammatical rule of subject-verb agreement (Kashima & Kashima, 1997; Li & Thompson, 1976).

In a paradigm similar to Mills (1986), the influence of language on gender assignment, using cartoon depictions of non human species and inanimate objects was examined in task 1. The representation of an object rich in idiosyncratic attributes, as in cartoons has been found to be a useful tool in cross-cultural research (Thompson & Zerbinos, 1995). In order to untangle the prospective interference of perceived gender-related attributes in the objects as opposed to the gender tag identification, a semantic differential test, similar to that outlined in Clarke et al. (1981) was carried out in task 2.

It was hypothesized that the grammatical gender marker in Spanish and be the primary influence in the way adults conceptualize different objects. In the case of English and Japanese,

however, the choice of gender would be primarily influenced by the perceived gender related characteristics.

Method

Participants

48 English (males = 24, females = 24; mean age = 20), 42 French (males = 21, females = 21; mean age = 24), 50 Japanese (males = 25, females = 25; mean age = 20), and 48 Spanish (males = 24, females = 24; mean age = 21), speaking adults participated in the experiment. All participants were college educated.

Materials

Cartoons of 35 different objects were prepared. Each cartoon was in black-and-white and measured 6 × 6 cm approximately. The cartoonist employed to illustrate the objects was highly experienced and was careful not to incorporate any traits which might be interpreted as gender stereotypes. Color was therefore also eliminated. In an attempt to ensure that the cartoons were uniform in their representation of the objects, a group of 50 university students (not part of the subject population) were asked to rate each cartoon on a 3 point scale, 1 being unrepresentative, 3 being clearly representative. Only cartoons scoring 3 on over 80% of replies were deemed reasonable to use in the context of the study. This reduced the list to 20.

For task 1, a booklet of 20 cartoons (see Appendix A for sample) was prepared for each participant. The set of cartoons represented 10 animate and 10 inanimate referents. For task 2, another booklet of 20 cartoons was prepared for each participant (see Appendix B for sample). The cartoons were the same as those used in task 1. A semantic differential scale, based on Osgood, Suci and Tannenbaum (1957) and shown to correlate with female-male traits (Mills, 1981) was used. Mills '(1981) five-point scale was simplified to a 2 point scale of low-high, hot-cold, small-big, beautiful-ugly and sad-happy, associated with femaleness and maleness respectively. Thus making the results of this attribute scale more comparable to the results of task 1.

The booklets for the Spanish, French, English and Japanese participants were identical apart from the language of the instructions.

Procedure

Participants were tested in groups. They were each given two booklets with cartoons of 20 objects in each. In task 1, they were asked to put a typical male or female name to each cartoon and to mark each one as being male or female by circling a cartoon of a boy or girl opposite the particular cartoon. In task 2, they were asked to mark each item on the following scales: low-high, hot-cold, small-big, beautiful-ugly and sad-happy. They marked only one of the words on the two point scale. Tasks 1 and 2 were administered one after another.

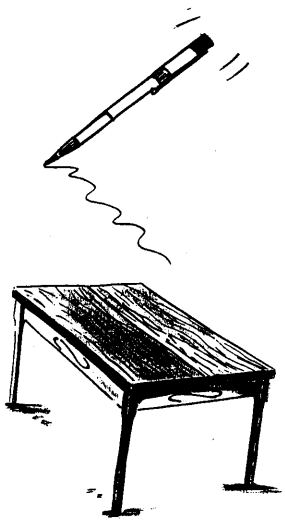
All instructions were given verbally in the native language of the subject by a native speaker. They were asked to work as quickly as possible.

Appendix A

Sample of Booklet used in Experiment 2 (English version)

AGE _____ SEX _____

Please give each object a name and mark if you think it is like a boy or a girl

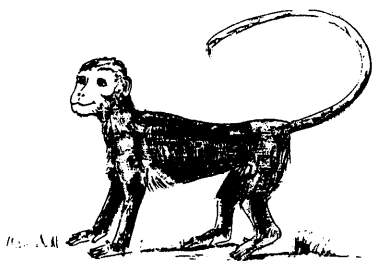


John

Mary

Appendix B

Sample of Booklet used in Experiment 3 (English version)



Please put a circle around the describing word for each object

Low	High
Warm	Cold
Little	Big
Beautiful	Ugly
Sad	Happy

Low	High
Warm	Cold
Little	Big
Beautiful	Ugly
Sad	Happy

Results and Discussion

The predominant responses[1] of the participants in the gender assignment task (task 1) and the gender attribute task[2] (task 2) are consolidated for the Spanish participants in Table 1, the French in Table 2, the English in Table 3 and the Japanese in Table 4.

There was a statistical significance between the grammatical gender and the assignment of gender in Spanish ($X = 7.5$, $p < .01$) and in French ($X = 11.83$, $p < .001$). For Spanish and French speakers, the choice of gender was related to the grammatical gender of the referring noun. Other factors must be have been relevant, however, since no cartoon received 100% agreement on the choice of sex. If grammatical gender alone determined the choice of gender, it would be expected that the masculine gender noun would have close to 100% selection on male gender, and feminine gender noun 100% selection of female gender. It is likely that attributes of the referents were influential. The question then remains whether the attributes of the referents of the masculine and feminine gender nouns correspond to the grammatical gender. If this is so, the relationship found above could be explained on the basis of attributes, not grammatical gender.

Table 1: The predominant responses of Spanish participants in a gender assignment task and gender attribute task are listed with the grammatical gender in order to show the relationship between these three aspects.

Noun	Gender of noun	Assigned Gender	Attributes
Watch	M	M	F
Bird	M	F	F
Car	M	M	NEITHER
Tiger	M	M	M
Sun	M	F	M
Monkey	M	M	F
Airplane	M	M	M
Tree	M	M	M
Elephant	M	M	M
Fish	M	M	F
Banana	M	M	F
Snake	F	F	F
Bed	F	F	M
Cup	F	F	F
Teapot	F	F	F
Frog	F	M	F
House	F	F	M
Candle	F	F	F
Flower	F	F	F
Moon	F	F	M

1. Over 60% of the responses had to be in that gender to qualify sa "predominant".
2. For ease of presenting data from task 2, the ratings at high, cold, big, ugly and happy were scored as masculine; those at low, hot, small, beautiful and sad as feminine (based on Mills, 1981; Gill, 1967). Aparticipant was deemed to score an item as masculine of feminine if he /she scores 3 or more of the 5 item scale as masculine or feminine respectively.

Table 2: The predominant responses of French participants in a gender assignment task and gender attribute task are listed with the grammatical gender in order to show the relationship between these three aspects.

Noun	Gender of noun	Assigned Gender	Attributes
Watch	F	F	NEITHER
Bird	M	F	F
Car	F	M	NEITHER
Tiger	M	M	M
Sun	M	M	F
Monkey	M	M	F
Airplane	M	M	M
Tree	M	M	M
Elephant	M	M	M
Fish	M	M	F
Banana	F	F	F
Snake	M	M	F
Bed	M	M	F
Cup	F	F	F
Teapot	F	F	F
Frog	F	F	F
House	F	NEITHER	NEITHER
Candle	F	F	F
Flower	F	F	F
Moon	F	F	M

Table 3 The predominant responses of English participants in a gender assignment task and gender attribute task are listed.

Noun	Assigned Gender	Attributes
Watch	M	F
Bird	F	F
Car	M	M
Tiger	M	M
Sun	F	M
Monkey	M	F
Airplane	M	M
Tree	F	M
Elephant	M	M
Fish	NEITHER	F
Banana	F	F
Snake	M	M
Bed	F	F
Cup	F	F
Teapot	F	F
Frog	M	NEITHER
House	NEITHER	M
Candle	F	F
Flower	F	F
Moon	F	M

Table 4: The predominant responses of Japanese participants in a gender assignment task and gender attribute task are listed.

Noun	Assigned Gender	Attributes
Watch	F	F
Bird	F	F
Car	M	M
Tiger	M	M
Sun	M	M
Monkey	M	F
Airplane	M	M
Tree	M	M
Elephant	M	M
Fish	M	M
Banana	M	F
Snake	F	F
Bed	F	F
Cup	F	F
Teapot	F	F
Frog	M	F
House	F	M
Candle	F	F
Flower	F	F
Moon	F	M

Analysis of data from task 2 revealed that there was relationship between the assigned gender and the attributes assigned to the cartoons in Spanish ($X = 5.446$, $p < .05$) but it was a weaker association than that between grammatical gender and gender assignment ($X = 7.5$, $p < .01$). There was no significant relationship between the assigned gender and the assigned attributes in French ($X = 1.35$, n.s.). For example, while the Spanish participants scored *monkey* as male 100% of the time in the gender assignment task 1, the vast majority marked monkey as having more feminine attributes in task 2. *Monkey* is a masculine noun. Likewise in French, *bed* was scored as male by the majority of participants in task 1, but when asked to attribute characteristics to bed in task 2, most marked feminine qualifications. *Bed* is a masculine noun.

In the case of English and Japanese, there was a significant relationship between the attributes assigned to the cartoons in task 2 and the gender assigned in task 1 (English: $X = 5.46$, $p < .05$; Japanese: $X = 4.02$, $p < .05$).

Conclusion

The evidence presented here for the Spanish and French participants shows that gender as a language classification system offers the possibility to the speaker of classifying reality in this way, if it is appropriate to do so. In almost all cases, the gender attributed to the object matched the

grammatical gender, overriding their perceived attributes.

For the English and Japanese participants, most objects that were assigned particular genders in the gender assignment task 1 were again given those matching genders in the perceived attributes assignment task 2. The inconsistency in the choice of gender and attributes between the English and Japanese groups is worth noting. Both subject groups assigned the cartoon of the *monkey* as male, yet assigned more feminine attributes to it. Likewise, the majority of both subject groups rated *moon* as female, yet as having more masculine characteristics.

General Discussion

The current results advance our knowledge of the cross-cultural understanding of language and gender. When assigning a gender to a cartoon of an object, the dominant influence on Spanish and French subjects was grammatical gender, while perceived attributes were the primary influence on English and Japanese speakers. The results confirm the description of gender systems by several authors as the potential basis for personification (e.g. Hjelmslev, 1956; Jespersen, 1924: Weinold, 1967). Jakobson's report (1959) of problems in translating personified non-animate nouns into other languages suggests that these findings can be generalized. These findings are in line with investigations carried out by Mills (1981) and Gill (1967) on sex stereotypes in children's literature. Sex is predominantly assigned according to the grammatical gender of the referent noun. So, for example, *frogs* are assigned male gender in children's literature in Germany, corresponding to the masculine gender of *Frosch*, whereas a *dragonfly* is made female corresponding to the feminine gender of *Libelle*.

The status of gender as an "omnirelevant noticeable" (Garfinkel, 1967, p.118) in social interaction, may be extended to language use itself. Guiora, Beit-Hallahmi, Fried and Yoder (1982) suggest that children learning Hebrew, which has grammatical gender, come to recognize their own gender identity earlier than those learning English (in which gender has a minor role) or Finnish (which has no gender category). It is therefore possible that acquisition of a language with or without a formal gender principle might influence cognitive processing. Indeed, in recent years, French speakers seem to be determined to make the gender of animate nouns reflect the sex of their referents.

Cross-cultural understanding of gender perception and language has implications for a range of areas, from language education and translation, to gender stereotyping in children's literature. The issue of how a bilingual person, in say Spanish and Hindi, both gendered languages, but with limited matching on those genders, might assign gender would shed further light on the impact of language on deictic reference (Flaherty & Richardson, 1996; Flaherty, 1998) and confirmed the influence of language on thought. The relevance of gender assignment to cognitive development and the impact in terms of cognitive flexibility in categorization tasks merits further investigation.

References

Au, T. (1992). Counterfactual reasoning. In G. Semin & K. Fiedler (Eds.). *Language, interaction, and social cognition* (pp.194-213). London: Sage.

Brown, R., & Lenneberg, E. (1954). A study in language and cognition. *Journal of Abnormal and Social Psychology*, **49**, 454-462.

Clarke, M.A., Losoff, A., McCracken, M.D., & Still, J. (1981). Gender perception in Arabic and English. *Language Learning*, **31**, 159-67.

Corbett, G.G. (1991). *Gender*. Cambridge: Cambridge University Press.

Flaherty, M. (1998). Spatial Deictic Reference: A Comparison of japanese and English, *Tohoku Psychologica Folia*, **57**.

Flaherty, M., & Richardson, W. (1996). Cognition, perception and deixis: the expression of spatial relationships in Spanish and English. In *Time, Space and Identity*, Proceedings of the Second International colloquium on Deixis, (pp.135-151). France: Centre de Recherche en Informatique de Nancy.

Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs, NJ: Prentice Hall.

Gill, W.S. (1967). Animal content in the Rorschach. *Journal of Projective Techniques and Personality Assessment*, 49-56.

Guiora, A.Z., Beit-Hallahmi, B., Fried, R., & Yoder, C. (1982).Language environment and gender identity attainment. *Language Learning*, **32**, 289-304.

Gumperz, J.J., & Levinson, S.C. (1991). Rethinking linguistic relativity. *Current Anthropology*, **32**, 613-623.

Hardin, C., & Banaji, M.R. (1993). The influence of language on thought. *Social Cognition*, **11**, 277-308.

Hinds, J. (1982). *Ellipsis in Japanese*. Edmonton, Canada: Linguistic Research.

Hjelmslev, L. (1956). On numerus og genus (On number and gender). In L.L. Hammarich (Ed.), *Festskrift til Christen Moller* (pp.167-190). Copenhagen: Borgens.

Hopper, R., & LeBaron, C. (1998). How gender creeps into talk. *Research on language and Social Interaction*. **31**(1), 59-74.

Jakobson, R. (1959). On linguistic aspects of translation. In R.A. Brower (Ed.) *On Translation*, 232-9. Cambridge, MA: Harvard University Press.

Jespersen, O. (1924). *The philosophy of grammar*. London: George Allen and Unwin (Reprinted 1975).

Kashima, E. S., & Kashima, Y. (1997). Practice of the self in conversations: Pronoun drop, sentence coproduction, and contextualization of the self. In K. Leung, Y. Kashima, U. Kim, & S. Yamaguchi (Eds.), *Progress in Asian social psychology* (pp.165-179). Singapore: Wiley.

Li, C. N., & Thompson, S.A. (1976). Subject and topic: A new typology of language. In C.N. Li (Ed.), *Subject and topic* (pp.457-489). New York: Academic Press.

Mills, A.E. (1981). *The Acquisition of Gender: A Study of English and German*. Berlin: Springer.

Mills, A.E. (1986). Acquisition of German. In D.I. Slobin (Ed.). *The crosslinguistic study of language acquisition* (Vol.1). Hillsdale, NJ: Lawrence Erlbaum.

Osgood, C.E., Suci, G.J., & Tannebaum, P.H. (1957). *The Measurement of Meaning*. Urbana: University of Illinois Press. (4th ed. 1964).

Sacks, H. (1992). *Lectures on conversation*. (Vol.2), edited by G. Jefferson). Oxford, England: Basil Blackwell.

Sapir, E. (1970). Language. In D.G. Mandelbaum (Ed.), *Culture, language and personality: Selected essays* (pp.1-44). Berkeley: University of California Press.

Thompson, T.L., & Zerbinos, E. (1995). Gender Roles in Animated Cartoons: Has the Picture Changed in 20 Years? *Sex Roles*, **32**, (9/10), 651-673.

Weinold, G. (1967). *Genus und Semantik*. Konigstein im Taunus: Anton Hain Meisenheim.

Whorf, B.L., & Carroll, J.B. (Eds) (1956). *Language, thought and reality: selected writings of Benjamin Lee Whorf*. Cambridge: MIT.

Zubin, D.A., & Kopcke, K.M. (1984). Affect classification in the German gender system, *Lingua*, **63**, 41-96.

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